

What Is Claimed Is:

1. A passive optical network system having an
optical line terminal for transmitting a plurality of types
5 of distributed data using optical signals, a plurality of
optical network terminations for receiving said distributed
data using optical signals; and a light splitting device
for distributing the distributed data transmitted from said
optical line terminal to said plurality of optical network
10 terminations by means of optical signals,

wherein each of said plurality of optical network
terminations comprises:

15 a control information transmitting unit for
transmitting a reception request for at least one of said
plurality of types of distributed data to said optical line
terminal, said reception request designating the type of
said at least one distributed data; and

20 a data selection unit for selecting distributed
data for said reception request from one or more types of
distributed data transmitted from said optical line
25 terminal; and

wherein said optical line terminal comprises:

a distributed data transmitting unit for
transmitting distributed data that is set to be transmitted
25 among said plurality of types of distributed data to said
plurality of optical network terminations; and

a setting unit for receiving said reception request and setting said distributed data transmitting unit so that distributed data of the types designated by said reception request is transmitted.

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2. The passive optical network system according to claim 1, wherein said setting unit of said optical line terminal checks whether or not said distributed data transmitting unit has already been set to transmit

10 distributed data of the types designated by said reception request, and sets said distributed data transmitting unit if said distributed data transmitting unit has not been so set.

15 3. The passive optical network system according to
claim 1, wherein said control information transmitting unit
of said optical network termination transmits a reception
ending request for requesting ending of the reception of
distributed data that is being received, to said optical
20 line terminal, said reception ending request designating
the type of distributed data for which the ending of said
reception is requested; and

25 said setting unit of said optical line terminal receives said reception ending request, and cancels the setting of said distributed data transmitting unit for distributed data of the type designated by said reception ending request if distributed data of said designated type

has not been selected by any optical network termination other than the optical network termination that has transmitted said reception ending request.

5 4. The passive optical network system according to
claim 1, wherein said setting unit of said optical line
terminal notifies the respective optical network
terminations of type selection data for indicating the type
of the distributed data that has been selected by each of
10 said plurality of optical network terminations; and
 said control information transmitting unit of
said optical network termination transmits said reception
request to said optical line terminal if the type of
distributed data whose reception is requested is not
15 included in said notification.

5. The passive optical network system according to claim 1.

wherein said control information transmitting
20 unit of said optical network termination transmits a
reception ending request for requesting ending of the
reception of distributed data that is being received, to
said optical line terminal, said reception ending request
designating the type of distributed data for which the
25 ending of said reception; and

wherein said setting unit of said optical line
terminal notifies the other optical network terminations of

the stopping of the transmission of the distributed data of
the type designated by the reception ending request if the
optical network termination that has transmitted said
reception ending request is an optical network termination
5 of a monitored object, said optical network termination of
a monitored object being an optical network termination
that has initially selected the distributed data of the
type designated by said reception ending request in a state
in which any of the optical network terminations has not
10 previously selected said data;
cancels the setting of said distributed data
transmitting unit for distributed data of said type if a
reception request for distributed data of said type is not
received from the other optical network terminations within
15 a specified time following said notification; and
maintains the setting of said data transmitting
unit for distributed data of said type, and designates the
optical network termination that has transmitted said
reception request as a new optical network termination of
20 the monitored object, if said reception request is received
within said specified time.

6. The passive optical network system according to
claim 5, wherein, when two or more said reception requests
25 are simultaneously received from two or more optical
network terminations within said specified time, said
setting unit of said optical line terminal designates an

optical network termination with a high priority according to a preset priority ranking as a new optical network termination of the monitored object.

- 5 7. The passive optical network system according to
claim 1, wherein said control information transmitting unit
of said optical network termination notifies other optical
network terminations of the type of distributed data whose
reception is requested, transmits said reception request if
10 said type of distributed data whose reception is requested
is not present among the types of data transmitted from
other optical network terminations, which is being received
by said other optical network terminations, and, if said
notification is received from another optical network
15 termination, transmits the type of distributed data being
received by said optical network termination itself to said
other optical network terminations.

8. A communication method in a passive optical
20 network system having an optical line terminal for
transmitting a plurality of types of distributed data using
optical signals, a plurality of optical network
terminations for receiving distributed data using optical
signals, and a light splitting device for distributing the
25 distributed data transmitted from said optical line
terminal to said plurality of optical network terminations

by means of optical signals, said method comprising steps
of:

transmitting, in each of said plurality of
optical network terminations, a reception request for at
5 least one of said plurality types of distributed data to
said optical line terminal while designating the type of
said at least one distributed data; and

transmitting, in said optical line terminal,
distributed data of the type designated by said reception
10 request transmitted from each of said plurality of optical
network terminations among said plurality of types of
distributed data to said plurality of optical network
terminations.

15 9. An optical line terminal in a passive optical
network system, for distributing distributed data to a
plurality of optical network terminations by means of
optical signals, comprising:

a distributed data transmitting unit for
20 transmitting distributed data that is set to be transmitted
among a plurality of types of distributed data, to said
plurality of optical network terminations; and

a setting unit for receiving a reception request
transmitted by at least one of said plurality of optical
25 network terminations, said reception request designating
the type of distributed data whose reception is requested
among said plurality of types of distributed data, and for

setting said distributed data transmitting unit so that distributed data of the types designated by said reception requests is transmitted.

- 5 10. A communication method performed by an optical line terminal for distributing a plurality of types of distributed data to a plurality of optical network terminations by means of optical signals via a light splitting device, comprising steps of:
- 10 receiving a reception request transmitted by at least one of said plurality of optical network terminations, said reception request designating the type of distributed data whose reception is requested among said plurality of types of distributed data; and
- 15 transmitting distributed data of the type designated by said reception request among said plurality of types of distributed data.

11. An optical network termination in a passive optical network, for receiving distributed data transmitted from an optical line terminal by means of optical signals, comprising:

20 a control information transmitting unit for transmitting to said optical line terminal a reception request for setting said optical line terminal so that said optical line terminal selects and transmits distributed data whose reception is requested by said optical network

termination among a plurality of types of distributed data,
said reception request designating the type of said
distributed data whose reception is requested; and

a data selection unit for selecting and receiving
5 distributed data for said reception request from one or
more types of distributed data transmitted from said
optical line terminal among said plurality of types of
distributed data.

10 12. A communication method performed by an optical
network termination in a passive optical network system,
said optical network termination receiving distributed data
transmitted from an optical line terminal by means of
optical signals, said method comprising steps of:

15 transmitting to said optical line terminal a
reception request for setting said optical line terminal so
that said optical line terminal selects and transmits
distributed data whose reception is requested by said
optical network termination among a plurality of types of
20 distributed data, said reception request designating of the
type of said distributed data whose reception is requested,
and

selecting and receiving distributed data for said
reception request from one or more types of distributed
25 data transmitted from said optical line terminal among said
plurality of types of distributed data.